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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,523	03/08/2001	Kim B. Roberts	9-13528-128US	5020

20988 7590 03/21/2005

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EXAMINER	
NGUYEN, HANH N	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/800,523	ROBERTS ET AL.	
	Examiner	Art Unit	
	Hanh Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19-26,10, 36 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 19, it is not clearly stated what "the position word having a significant hamming distance relative to a shifted version of itself" and "the identifier word having a significant hamming distance relative to each of the other identifier words in the set" means.

Claims 20-26 are rejected because they depend on claim 19 respectively.

Examiner reserves his right to examine claims 19-26 upon an explanation is replied from applicant.

In claims 10 and 36, it is not clearly stated what " the identified interleaved sub-stream has previously been associated with another one of the recovered sub-stream" means.

In claim 45, it is not clearly stated what " a bit pattern in each synchronizing word is selected such that an enery spectrum of the synchronization words interleaved within the data signal is substantially white" means. Examiner reserves his right to examine this limitation upon an explanation is replied from applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4, 5, 8, 9, 27, 28, 30, 31, 34, 35 and 45 are rejected under 35 USC 102(e) as being anticipated by Tezuka (Pat. 6,331,989 B1).

In claims 1 and 27, Tezuka discloses a method framing data signal (frame synchronization, see col.3, lines 38-45) received through a communications network (see fig.1), the data signal (multiplexed signal comprising signals A,B,C,D transmitted on optical fiber 9, fig.1) comprising M (an , M >1) interleaved sub-streams (signals A,B C, D, see fig.1) the method comprising steps of inverse multiplexing the data signal to generate the M recovered sub-streams (demultiplexer 2 demultiplexes the multiplexed signal into original signals A, B, C, D, see col.3, lines 52-60 & col.4, lines 38-45); and detecting a respective unique synchronizing word (a predetermined synchronized pattern) in each of recovered sub-streams within a predetermined search window (frame synchronization circuit 3 sequentially detects a

predetermined synchronization pattern (unique synchronization world) from each signal A, B, C and D respectivelly such that a STM-1 frame synchronized byte is detected from signal C, see col.3, lines 60-65; in similar, a synchronized byte is detected from signal B, see col.4, lines 12-16; and a STM-1 framesynchronized byte is detected from signal A, see col.4, lines 27-32, see col.7, lines 20-26 & col.4, lines 40-45 & col.4, lines 60-65).

In claims 4 and 30, Tezuka discloses a method as claimed in claim 1 wherein the step of detecting a unique synchronizing word comprises steps of: searching each recovered sub-stream to detect respective synchronizing word (fig.2, col.5, lines 43-52 discloses the searching of each signals A,B,C,D to detect a synchronized pattern); when synchronizing word is detected in a sub-stream (col.5, lines 42-50 discloses an STM-a synchronized byte as synchronized pattern is detected from signal A), asserting respective individual frame found state for a first predetermined period of time (a control signal R is set at "H" level, col.5, lines 46-48); and asserting a master frame found state if the individual frame found state is asserted in respect of allof the sub-streams within the predetermined search window (when all signals A, B, C, D have been searched such that no synchronized pattern is detected by frame synchronization circuit 13,14, 16; control signals P, Q and S are set at "L" level, see col.5, lines 45-50).

In claims 2, 5, 28 and 31, Tezuka discloses a method as claimed in claim 1, wherein the width of the predetermined search window is determined using an expected delay between corresponding data units of a first interleaved sub-stream and a last interleaved sub-stream of the data signal (short transmission delay time described in detecting synchronized pattern in each signals A, B, C, D, see col.5, lines 5-12 and claim 1).

In claims 8 and 34, Tezuka discloses asserting information indicative of the synchronizing word detected in the respective recovered sub-stream (a control signal R is set at "H" level when a synchronized pattern is detected from signal A in Fig.2, col.5, lines 43-50), but does not disclose de-asserting an individual Out-of-Frame flag associated with the respective recovered sub-stream. However, deasserting an out-of-frame flag associated with the recovered substream is well-known in an art when a synchronized pattern is found in a recovered substream. Therefore, it would have been obvious to one ordinary skilled in the art to substitue the out-of-frame flag into Tezuka in order to indicate that a synchronized word in a substream is found.

In claims 9 and 35, Tezuka discloses identifying a respective one of the interleaved sub-streams using the asserted information indicative of the synchronizing word detected in the recovered sub-stream (fig.2, col.5, lines 42-50 discloses a multiplexed signal A using a control signal R which is set as "H" level indicating that a synchronized pattern is detected in output signal K); and associating the identified interleaved sub-stream with the recovered sub-stream (fig.1, col.3, lines 52-60 describes multiplexed signals A toD are demultiplexed as outputs signals E to H).

In claim 45, Tezuka discloses a method of transporting a data signal comprising a plurality of interleaved sub-streams through a link of a communications network (a multiplexed signal comprises signals A, B, C, D transmitted on optical fiber 9 of network in fig.1, see col.3, lines 52-55), each sub-stream being uniquely identified by a respective synchronization word inserted into the respective sub-stream prior to interleaving the sub-streams into the data

signal(transmitter inserts a sync pattern into each signal before being multiplexed with other signals, see col.5, lines 10-15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 6, 29, 32 are rejected under 35 USC 103(a) as being unpatentable over Tezuka (Pat. 6,331,989 B1) in view of Gupta (Pat. 6,069,928).

In claims 6 and 32, Tezuka does not disclose buffering a portion of the recovered sub-stream; and comparing the buffered sub-stream data against each one of a set of predetermined unique synchronizing words to detect a respective one of the set of predetermined unique synchronizing words in the recovered sub-stream. Gupta discloses buffering a portion of the recovered sub-stream (fig.3A discloses M signal streams output from demux 140 is stored in modulo M buffer 345, col.3, lines 22-28). Gupta further discloses comparing the buffered sub-stream data against each one of a set of predetermined unique synchronizing words to detect a respective one of the set of predetermined unique synchronizing words in the recovered sub-stream (fig.5 discloses a memory bank in the buffer 345 is activate to determine whether a valid synchronized word is detected, the determination is made by doing a bit by bit comparison of the contents of respective shift registers (comparing buffered substream) with the contents of a synchronized word stored in memory (against each predetermined unique synchronized word) to

determine if there is a match (to detect a respective one of the set of predetermined unique synchronizing words). See col.4, lines 42-55. Therefore, it would have been obvious to one ordinary skilled in the art to implement into each frame synchronization circuit of Tezuka a buffer in order to store the demultiplexed data stream and perform the comparing of the synchronized pattern in the stored data stream with a predetermined unique synchronized word to determine a match.

In claims 3 and 29, as disclosed in claim 1 and 2 above wherein Terzuka discloses an expected delay between corresponding data units of a first interleaved sub-stream and a last interleaved sub-stream of the data signal, see col.5, lines 5-12. Tezuka does not disclose a method the search window corresponds to a portion of the data signal received during a period of up to twice an expected delay between corresponding data units of a first interleaved sub-stream and a last interleaved sub-stream of the data signal. Searching a synchronized pattern in each signals in a window up to twice an expected delay is well-known and preset accordingly. Therefore, it would have been obvious to one ordinary skilled in the art to set or adjust the search window corresponds to a portion of the data signal received during a period of up to twice an expected delay between corresponding data units of a first interleaved sub-stream and a last interleaved sub-stream of the data signal accordingly.

Allowable Subject Matter

Claims 11-18, 37-44, 7 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claims 11 and 37, the prior art does not disclose detecting a location in the data signal at which individual frame found states are simultaneously asserted in respect of at least N (an integer 1<N<M) of the M recovered sub-streams; asserting the search window bracketing the detected location at which individual frame found states are simultaneously asserted in respect of at least N of the recovered sub-streams.

In claims 7 and 33, the prior art does not disclose when a position word is detected in the recovered sub-stream, comparing the buffered sub-stream data against each one of a set of predetermined valid identifier words to detect an identifier word in the recovered sub-stream.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa (pat. 6,219,357 B1) discloses Channel multiplexed demultiplexed Method and channel multiplexed demultiplexed unit.

Snyder, Jr. et al. discloses Random Unique Word Detection Method and Apparatus.

Fields et al. (Pat. 6,771,671 B1) discloses data Flow Synchronization and Ordering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8AM to 5PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HANH NGUYEN
PRIMARY EXAMINER